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THE DIFFERENCE BETWEEN THE MENTAL AND
THE PHYSICAL.

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The important discussion which has been in progress of late concerning the nature of Consciousness¹ has stimulated all of us to criticize our opinions upon this topic. And while it seems as though everything pertinent to the matter must already have been said, yet one may perhaps be forgiven for offering an additional account. I feel strongly that progress would be easier if the problem were divided; and so I shall consider separately two questions which are prominent in the papers I have referred to:

- (1) *What is the distinction between the physical and the mental field? and*
- (2) *In what respect, if at all, is consciousness different from the field marked off as mental?*

Only the first of these questions will be taken up in the present paper; the other will be treated in an article which I hope will follow. There is also this farther limitation in the present case, that I shall try to avoid entirely the genetic problem. The question for us, then, will not be, What are the factors which have influenced the race or the individual to distinguish between the mental and the physical world? but rather, What is that statement of the difference, which, with our accumulated knowledge and critical apparatus, seems most exact and satisfactory to us now? Not the origin and history of the distinction, then; but the actual difference, so far as we can at present make it out.

¹ Among other articles, see: James, 'Does Consciousness Exist?' *Journ. of Philos., Psychol. and Scient. Methods*, I., 477; Woodbridge, 'The Nature of Consciousness,' the same journal, II., 119; Montague, 'The Relational Theory of Consciousness, and its Realistic Implications,' *ibid.*, II., 309; Bush, 'An Empirical Definition of Consciousness,' *ibid.*, II., 561; Perry, 'Conceptions and Misconceptions of Consciousness,' *PSYCHOLOGICAL REVIEW*, XI., 282.

Moreover, my aim is not to formulate the difference between thought and its objects in general, but rather to state the difference between two groups of those objects, — between that group which we call physical things, and that other group of existences (also, without error, to be called 'objects') which we recognize as psychic or mental. Without more preliminary, let me pass at once to what seems to me the answer to our question.

Mental and physical existences are to be distinguished by their behavior, and ultimately perhaps by their behavior only. To start with, and at the risk of seeming to use a mere tautology, we may say that physical things are those which act like physical things, while mental facts are those that act as if they were mental. This means that we shall not succeed in identifying the one or the other by some fixed and peculiar mark which each displays. We cannot, by observing the object while merely passive, discover its proper class. We must see it in action, and carefully note its mode of conduct, its governing laws; these and these alone are the absolutely certain basis for distinguishing one group from the other. And by its mode of action, we must understand not its action when the object is taken in isolation, but its way of influencing its associates, the response it makes to this or that surrounding, the circumstances in which it comes into existence and changes and disappears.

This criterion has the virtue which, as we shall come to see later, the social criterion possesses also in some degree — the virtue of being a direct translation into theory, of a method which practical life constantly employs. If we are in doubt whether the door-bell really rang or we merely imagined the sound, we decide perhaps by going to the door or by waiting to hear whether it will ring again. The physical ring occurs with some one at the door and, if unanswered, usually comes again. The purely mental ring comes in a different setting and has a different consequence. Or in the case of vision, when I look at the paper on my desk I say that I have before me both a psychological fact and a physical fact, because there are two things which behave in different ways. The psychological fact, the visual appearance, may be destroyed by a mere wink of the eyes, and called into life by opening them. The physical object can be destroyed by fire, and I do not know how it can be restored at all. The test by action, by the governing law, is not a matter merely of fine-drawn speculation; it is a test constantly employed in life.

But when it is said that the difference between mental and physical objects is found, not so much in their inherent qualities as in their

manner of acting, — not so much in what we might call their morphology as in their physiology — the first impression might be that this difference of action will be found in the fact that physical objects have a regularity of behavior which psychical objects lack.

It is doubtless true that, speaking in the rough, our mental phenomena show a fickleness that contrasts with the physical objects' obedience to law. This fickleness, however, is hardly inherent in the facts themselves; it is rather the projection of our intellectual confusion with regard to them, our failure to understand their law. As believers in the orderliness of the world, we must assume that mental phenomena are, in fact, as regular as are physical objects. Their behavior, we believe, can ultimately be expressed in general laws. And while these laws are exceedingly difficult to discover, yet difficulty is but a relative thing, and will serve as no final distinction between the two realms.

Nor — to express much the same thought in a slightly different way — is it true that a physical occurrence has regular antecedents and consequents, while a mental occurrence has not. A thousand dollars in the bank can do something; it can start a chain of events which will go on indefinitely. An imaginary bank-account, we might be inclined to say, is impotent, it sets nothing going, it has no regular effects. But in scientific exactness, of course, this is not the case. The imaginary bank-account has quite as real a chain of consequences as has an actual credit at the bank. It produces an effect both upon its possessor and upon the world at large, though its effect is different from that which flows from what is physically real. To its deluded owner it gives a sense of security and power, it influences his purchases, it affects his attitude toward the persons he meets. They too act toward him in a way which shows the effect upon them of his delusion: they perhaps believe him to have the money, or they humor him in his error, or pity or deride him. The world within and the world without is thus modified from this purely mental source. But just because the consequences are so different, because the phenomenon runs so peculiar a course, do we class it by itself and call it a mental fact. So too an imaginary illness has consequences, quite as truly as a 'real' disease. But the physical sickness has accompaniments and sequelæ which are different from those of the imaginary sickness. It must be cured by special means, it runs a different course. The two orders of occurrence, the physical and the mental, differ not by reason of the presence or absence of effects in general, but by reason of the different kinds of effects which they produce.

But if one were now to ask that the enquiry be pushed farther and some statement given of the particular kind of conduct which should mark the physical, and the special kind that should mark the mental, then the best that we can say would surely fail to satisfy those who wish some final and definite answer. For at this point we should be forced to make a general reference to the detailed discoveries of the physical and the mental sciences. These are the systems whose very office it is to give us just this knowledge, to tell us exactly what are the peculiar habits of physical objects and what the habits of mental things. There is no other way of telling accurately how they do behave; these sciences are the organized answer to our very question. And the answer will never be complete until science has done its perfect work.

But out of the partial results which science already gives us, certain general differences could doubtless be extracted if one had the knowledge and the patience for the work. Thus we might even now say that physical objects display — not a permanence, exactly, as is often said; for lightning and thunder are as transitory as is anything mental — but physical things usually display a kind of connection, or continuity, which is of a different form from the continuity of our mental objects. When a physical thing changes we can usually discover some representative of it still remaining; a building burns, and a heap of bricks and ashes is in its place; riches take wings, but there is still the thread-bare gentility, the mortgaged estate, the one faithful servant, to remind one of what has been. But when a dream passes away, we may fail to discover any remnant or representative of the fact itself. Some fragmentary memory of the dream may come again; and although, in the interim between dream and recollection, there is doubtless some bond of connection — some ‘disposition,’ let us say, — yet we cannot actually experience any continuous connection, nor can we well imagine what would be the suitable phenomenal intermediaries between our disjoined mental acts. The same thing is seen from another side when we notice the quantitative equivalence which many physicists would say is an essential part of causal connection. But any such quantitative equivalence is highly uncertain in the case of mental causation; so that the fundamental form of the connection, the causal law itself, is doubtless different in each of these different fields.¹

So much by way of illustration of what would be necessary if one

¹ The outline of a discussion of this point, under the title of ‘Modified Causation for Psychology’ will appear in the proceedings of the recent meeting of the American Psychological Association at Harvard University.

were to work out in detail the principle here adopted. It is empirical; it simply elaborates the results of observation and experiment. Let us now consider whether this whole account is not uncalled for; whether its work is not better done by what has recently been offered by others. Let me, then, take up briefly some of these other views.

"The field of psychology," says Dr. Perry in the article already cited, "comes into view only when an incomplete experience is recognized as such from the standpoint of an experience regarded as objective. The corrected or discredited experience so determined critically in an experience of things, is regarded as merely my experience. . . . These psychical data cannot be called things or reals in the same sense as the standard objects, for they are completed and replaced by the latter." Whatever thus reveals its imperfection is regarded as psychic; that which has not been so discredited plays the rôle of 'thing' or 'real.'

I am not sure that Dr. Perry intended 'thing' or 'real' here to be understood as *physical* reality; it is possible that he is using 'reality' in some wider sense. So that what I shall say is not intended to be a refutation of his doctrine, but is aimed simply to show that it is no sufficient answer to the particular problem with which this present paper deals. Genetically the discovery of inadequacies has doubtless been of influence in marking off the psychic field; but the psychic field is not completely and finally marked off in this way and in this way alone. I have many experiences which have never been discredited, but which nevertheless I persistently regard as 'my experience' and as psychic. For example, I do not see but that I must regard my intention to take a suburban train this afternoon as a psychic datum. And yet, in order to recognize it as psychic, it has not been necessary to discredit it or to recognize its inadequacy. So far as I can see, my present intention to take the train is an entirely adequate and appropriate act for me to perform. I may never carry out my intention, it is true; but whether I do or do not, this in nowise affects either the present or the subsequent status of my intention, so far as its presence or absence from the field of psychology is concerned. Or, to take another illustration, shall we say that Shakespeare's *Tempest* — as a purely imaginative fact, apart from stage or paper, ink or voice — is adequate or inadequate, discredited or the reverse? *Æsthetically* it certainly has not been discredited; and if we say that physically it has, and that for this reason we regard it as psychic and not as physical, this amounts to saying that we regard as mental all those things which differ from the physical — a statement which perhaps is true, but which furnishes us hardly the light we seek.

The doctrine espoused by Dr. Bush, that consciousness is the field of things private, while the physical world is the realm of public experience — a view familiar to the readers of Ward, Royce and others, — is deserving of a more careful treatment than would here be possible. But to express at once the difficulty I feel with this doctrine, there are innumerable experiences which we share with one another, but which nevertheless we regard as mental and not as physical at all. And if this be indeed the case, this *social* criterion does not sufficiently distinguish between the two worlds. To take up first the cases which are less significant, there are many well-known illusions which are common to all normal persons, the familiar space-illusions of Zöllner or of Müller-Lyer. While in all such instances there is a physical basis for the deceptive mental occurrence, yet there is a mental twist or distortion of the facts which has no existence except in our minds, while taken just as experiences or phenomena they are no more private than are those which we regard as physically real. To some persons there might seem more point in adducing examples that were less clearly due to aberrations in the organs of sense, — instances where a whole company is deceived by sleight-of-hand, or by more potent forms of suggestion like those in hypnotism. Hindoo fakirs are probably capable of making an entire group of people see a mango tree grow in a few minutes from seed to maturity — an experience which is real enough, and is social, but whose objects have a mental reality only and no existence in the physical world.

But the phenomena which seem to me most difficult to reconcile with the social distinction of mental and physical things, are not confined to the abnormal side of mind nor to circumstances where the mind is baffled or ill-adapted to its surroundings. The sanest and most solid portions of our experience seem to me to lead to a like result. One cannot but feel that for the English-speaking people, *Paradise Lost* is a community experience, is community property, in no very different sense from that in which we say that Niagara Falls or Westminster Abbey is a common possession. Not every one of our race enters into actual possession of the poem, nor indeed do all partake directly of the Falls or Abbey. But there the poem stands, like the physical objects, ready for any who will pass through the various conditions necessary for the experience.

We enter into the world of Milton through a physical gateway — through paper and ink and physical organs. But once we are within, we find ourselves viewing a purely mental creation, and one whose effect upon us is heightened by the thought that what we are in the

presence of is nothing personal and private, but is a common heritage of the race. In this sense, all the great mental achievements of mankind, not in the realm of art alone, but in science, in politics, in morals, in religion, are not private experiences merely, but are parts of our common world. We live and move in them as we do in the common air.

Nor are our social possessions confined to lifeless constructions of art, or to impersonal systems like those of morals. Persons themselves we hold in common. Lincoln belongs to the nation as truly as does the Capitol; and not the physical Lincoln merely, but the rugged soul of the man — his foresight, his patience, his faith in his fellow men. The world of communal experience is therefore immeasurably larger than even the infinity of the physical universe; it holds this, we might say, in the hollow of its hand.

The fact that an experience is public or is private seems to me, therefore, to give no sure indication as to whether it is physical or mental. We may pass on, then, to the view taken by Professor James.

Thought and thing, according to him, do not differ in their constituent qualities, but rather in their relations. Thoughts are not one separate group of objects, and things another. "The one self-identical thing has so many relations to the rest of experience that you can take it in disparate systems of association, and treat it as belonging with opposite contexts. In one of these contexts it is your 'field of consciousness'; in another it is 'the room in which you sit,' and it enters both contexts in its wholeness, giving no pretext for being said to attach itself to consciousness by one of its parts or aspects, and to outer reality by another."¹ Just as a point can exist at once in two distinct lines by being at their intersection, so in experience, he tells us, any given object can be taken in either one of two contexts — in that of my personal biography and in that of the history of the portion of the external world to which the object belongs. The two contexts seem farther to be distinguished by the fact that physical things show an energy of behavior which thoughts do not display. Physical objects *do* things and have constancy of action, while psychic objects are inert and erratic.

In so far as Professor James would distinguish physical and mental things by a difference in their mode of behavior, his view and the one presented in this paper are in perfect accord. The divergence begins with the attempt to describe the character of behavior characteristic of each group. When he says that physical things behave in

¹ Page 481 of James' paper already cited.

an energetic way, while psychic things do not, one cannot but recall the many inert things in the physical world — will-o'-the-wisps, thistle-down and rainbows, as well as the many energetic things in the mental realm — the mariner's error of reckoning, which brings shipwreck, or the broker's judgment of value, causing sales that range in the millions. The 'energy' of such psychic events need not at all depend on their 'affective' warmth, which is a border state between the mental and the physical, according to Professor James. They may be cognitive acts of the coldest sort. And as for psychic things being *irregular* in their causation and not simply without causal efficiency — being erratic as well as ineffectual, — what seems to me to be the truth on this point has already been expressed and need not here be repeated.¹ His view that the difference between thought and thing is a matter merely of context or relations is, however, more or less independent of these details in his doctrine and should be judged independently of them.

Just how far his distinction between 'thought' and 'thing' is intended to answer our question as to the difference between psychic and physical reality, I find it difficult to say. His illustrations at times indicate that he has our problem directly in mind. In viewing an actual room, there is, according to his view, a double context; as an actual room, it has a certain set of associates and a certain history; as a part of my field of consciousness, it has a different set of associates and a different history. But again, this same difference of relations, or of context, exists entirely *within* the mental field. A room merely *thought* of, Professor James tells us, has also such a doubling of connections, and may be viewed as 'thought' or as 'thing' according as we please to take it in one or another of these lines of association. And such an illustration leads one to feel that the doctrine here offered is not meant to distinguish the physical from the mental. For in the latter illustration, where the room is not seen but is merely thought of, both contexts may at the moment have no existence except in thought. Let us suppose, to make this clearer, that I am thinking of a room in a distant city, and unknown to me the actual house has burned down some hours before. We may now distinguish between: (1) the real room, once existent, but now destroyed; (2) the room existent in my thought; and (3) my thought of the room — some wish or antipathy, let us say, with regard to it, together with all else that makes up the psychic process. We have here three facts and three contexts, with more to be added at will. The first is physical; the

¹ See p. 3 of this article.

second and the third are patently psychic, in spite of their distinguishable contexts. So that the doubling of contexts which permits us to see the difference between a thought and a thing, does not provide us with any clear distinction between a physical thing and a thing not physical. In the case of purely imaginary constructions of art, as when we think of King Arthur's sword, a multiplication of contexts may clearly occur without going beyond the psychic field.

But since in all these illustrations there is some reference to a physical context, some attempt to copy the relations of physical things, let us have at least one instance where even that is taken away. Suppose that I am thinking of a conclusion at which I arrived the day before. In recalling such an experience there is as clear a case of doubling, as though I were thinking of something I had seen. My *present thought* of my conclusion has its special connections—my interest of the moment, in using it merely as an illustration. The *conclusion thought of* has a totally different context—the feelings and interests which existed while the reasoning was actually taking place. We have here a clear contrast between the 'thought of something' and the 'something thought of,' but lying wholly within the mental realm, and without even a distant reference to physical things. So that Professor James' discussion of the contexts of thoughts and things undoubtedly is of the greatest importance in helping us to think clearly of the distinction between mental states and their 'objects'; but since these objects may be mental as well as physical, we are left without any sure criterion by which to distinguish between these two orders of fact.

With this we may close our survey. My own feeling is, that in spite of the penetrating work that has been done of late upon the distinction of mind and body there is still need for us to be up and doing with regard to it. And so I have ventured to give, in the earlier part of this paper, what seems to me a better way of distinguishing the two fields, namely by a difference in their modes of behavior, by a difference in their laws of action. My own offering is intended only to point out what seems to me the most hopeful direction of progress,—a kind of humble guide-post to help past one fork in the road, though even the right direction has cross-roads and fresh difficulties ahead.

PSYCHOLOGICAL LITERATURE.

PLATO ON THE SOUL.

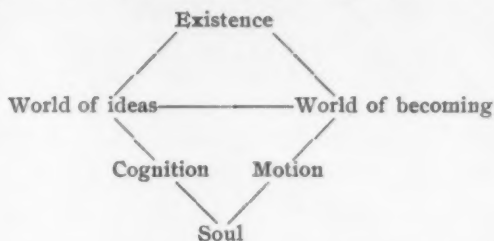
Plato's View of the Soul. ERIC J. ROBERTS. *Mind*, N. S., 1905, XIV., 371-389.

Following Lutoslawski's classification of Plato's Dialogues,¹ Roberts gives us a very clear account of the development of Plato's view of the soul, and shows the various stages through which this view passed, from dualism to a kind of contradictory solipsism. The usual opinion concerning Plato's idea of the soul and its relation to the world of ideas is the dualistic conception which, as Roberts shows, is a point of view which Plato gradually changes as he reaches his later works.

In the earlier dialogues we have presented an external world opposed to the soul, and within this dualism a further schism takes place. The soul was regarded by Plato "as the subject of knowledge or of cognitive activity in general, and as the principle of movement or of life. For Plato meant by the soul that which exercises these functions and only with respect to them can its place in the scheme of existence be determined" (p. 372). As regards the world of existence this "was divided into two classes — on the one hand the world of true being, consisting of ideas, the objects of knowledge, and on the other hand the realm of becoming or generation, with which opinion, based on sense perception, was concerned. There is reason to suppose that this distinction was never abandoned by Plato, although he qualifies and supplements it in various ways" (p. 373). Connection of some sort exists between these two sets of dualisms, in that, according to Plato, the soul "possesses two quite distinct but equally essential characteristics — cognition and motion, of which the former connects it with the world of eternal reality, the latter with the world of ceaseless change. At the same time the soul has an identity of its own and is not merged in either world. It possesses reason in common with the ideas, motion in common with the world of generation; but this very fact that it presents features which unite it to the two opposite realms of existence at once is proof that its nature is to be distinguished from both" (p. 375).

¹ The classification is as follows: First Platonic Group, Socratic dialogues, *Symposium* and *Phædo*; Middle Platonic Group, *Republic*, ii-x, and *Phædrus*; Later Group, *Theætetus* and *Parmenides*; Latest Group, *Sophist*, *Politicus*, *Philebus*, *Timæus* and *Laws*.

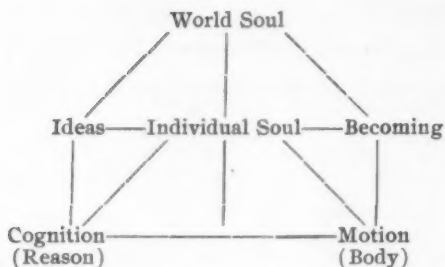
I venture to put this early standpoint of Plato into schematic form, following of course the presentation given by Roberts:



The contradiction here evident is well shown by Roberts. It is seen that the soul, in this scheme, has no place of its own, and seems to be 'lone wandering but not lost.' The soul would lose its immortality were it connected with the world of change or becoming, while, on the other hand, it cannot rank as a fixed and eternal idea, since it possesses the attribute of motion.

In this scheme it is seen that the disparateness of the various parts needs to be overcome. "Evidently there was need for a sort of 'Copernican change' in the Kantian sense of the expression, if any approach to a more adequate theory were to be made. And this is in fact what we find taking place in the later dialogues. The ideas by degrees vacate their position of transcendence and are seen to be dependent upon soul. Thus, as Lutoslawski puts it, 'the center of gravity of the Platonic system' changes, and it is to the soul, as the source at once of the ideas and of motion, that supreme reality is accorded. * * * A new investigation is undertaken, and the scheme of existence is gradually reconstructed, increasing attention being given to the subjective factor" (p. 378). In the later works of Plato, objects of knowledge become subjective categories, and the absolute separation of ideas and particulars is definitely rejected. Mind is considered as the final cause of all things, and the soul, as the originator of motion, leads to the natural extension of a universal soul, which orders and sustains all things. "The world-soul is described as a composite formation, a blend of all modes of existence and activity — ideal or archetypal ('undivided') and phenomenal ('divided') alike" (p. 381). While this conception of a world soul is logically a development of the notion of a personal soul, Plato seems to reverse the process and 'represents the human soul as somehow dependent upon the universal soul' (p. 383).

Again following Roberts' clear presentation, I once more venture to represent this 'Copernican change' as follows:



Concerning the immortality of the soul, Plato conceives this as belonging to *νόος* alone, and as being both 'individual' and 'personal.' The immortality which the soul has in virtue of its kinship with the ideas is qualitative rather than durational. "The existence of the ideas is eternal, *i. e.*, timeless and self-explanatory. To this the human soul can never completely attain; soul and body as indestructible have an immortality in time, but it is distinctly stated that they are 'not eternal,' as their nature is never entirely and absolutely at one with reason. Still, the more the soul by exercising her rational cognitive function upon the ideas brings herself into harmony with them, the more nearly does she become immortal in this highest sense" (p. 386).

As regards knowledge, in order to explain how the soul comes into contact with the ideas, we have the poetical hypothesis that it knew them in a previous existence before it became imprisoned in the body; a conception which is more poetically presented, I think, by Wordsworth's lines,

Our birth is but a sleep and a forgetting:
The Soul that rises with us, our life's Star,
Hath had elsewhere its setting,
And cometh from afar:
Not in entire forgetfulness,
And not in utter nakedness,
But trailing clouds of glory do we come
From God, who is our home.

The article of Roberts of which I have attempted to give some account is a very thorough bit of work and is worthy of careful study.

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PRAGMATISM.

Le Pragmatisme. C. DESSOULAVY. *Revue de Philosophie*, 1905, V. (7), 89-94.

M. Dessoulavy has given us a most concise and excellent account of the development of pragmatism, as thus far presented, and his short

article is also valuable for the number of references it contains. I may therefore be pardoned if I make a rather free use of his account, by bodily extraction and free translation.

As M. Dessoulavy says, and as is now rather well known, the term 'pragmatism' the title of the new system, first preferred by James, drew its origin from C. S. Peirce, who used the term in his paper of 1878, 'Illustrations of the Logic of Science,' *Popular Science Monthly*, Vol. XII., p. 287; but the system which bears the name pragmatism was outlined for the first time by William James, in his 'Philosophical Conceptions,' published, 1898, in the *Publications of the University of California*. Among the defenders of this theory soon appeared Schiller, who wrote in *Mind*, 'Useless Knowledge,' April, 1902, 'On Preserving Appearances,' July, 1903, in the *International Journal of Ethics* of July, 1903, in the *Personal Idealism* (Macmillan, 1903, essay 'Axioms as Postulates'), and also in his *Humanism* (Macmillan, 1903), in which the new title, 'humanism,' was adopted by him. He adopted this expression as representative of the pragmatic spirit, which in its common disapproval of intellectualism and pure irrationalism seems properly to belong to man, as a complex, according to Plato and Pascal, partly divine, partly brute.

Since the publication of *Humanism* have appeared Bradley's 'Truth and Practice,' *Mind*, July, 1904, James' 'Humanism and Truth,' *Mind*, Oct., 1904, Schiller's 'In Defence of Humanism,' *Mind*, Oct., 1904, H. W. B. Joseph's 'Prof. James on Humanism and Truth,' *Mind*, Jan., 1905, and finally William James' rather precise definition in the *Journal of Philosophy*, March 2, 1905. The religious aspect of pragmatism has been emphasized in the *Monthly Register*, Nov., 1902. In 1903, Vesey Hague in a series of articles in the *Irish Ecclesiastical Record* laid stress on the religious side, and finally an anonymous writer treated the subject in a similar manner in the *Tablet*, Feb. 11, 1905.

We must look upon pragmatism as the culminating point of the philosophical tendencies which have become evident in the course of the nineteenth century, *i. e.*, of Kantianism, evolutionism, and of philosophic utilitarianism.

Discouraged by the (to him) insoluble antinomies of pure reason, Kant insisted on the superiority of the practical reason. As it happened, however, in wishing to perfect his system his followers finally came to divergent paths, and were even discredited by Kant himself. The environment was probably not of the furthering kind, and pure idealism and pessimism usurped the place of the young heir to philosophic thought.

"While the German professors argued in their fashion, that is to say, somewhat 'in the air,' the English philosophers, less metaphysical than their brethren on the continent, followed the national road of experience, and that experience, of the senses. This English philosophy, correct as far as it goes, has always been somewhat lacking, unfinished, imperfect, characteristics which have not been removed even when Darwin came to its aid with his system. In ethics we know that the English school has ended by identifying moral good with utility" (p. 90).

These two lines of development, Kantian practiciness, and English experience and utilitarianism, so diverse in their points of departure, are finally joined by the mediating position of pragmatism. Agreeing with Kantianism, pragmatism strongly doubts pure metaphysics; agreeing with evolutionism, it admits the provisional and tentative character of our intellectual faculties; agreeing finally with the English moralists, it identifies the two forms of ethical good (the moral and the utilitarian) and furthermore makes them equal to truth.

James was first led to his theory of pragmatism by the increasing multiplicity of systems, especially of metaphysical systems. As he says, 'There can *be* no difference which doesn't *make* a difference.' We must use our own judgment as regards the different systems, and select some basic principle which will stand testing and examination. This principle is the principle of end, of result, of effect, — τὸ πρᾶγμα. 'Truth is found in, is shown by, the result' (p. 91).

Kant has done great service by placing pure reason in a certain disrepute, and thus has 'cleared the way a little' for the growth of empiricism. Darwin has emphasized the principle of natural selection, which was suggested by the process of selection going on in men's minds. 'We keep what is useful, we abandon what is useless' (p. 93). Axioms and principles themselves must stand the test of selection and experiment. Pragmatism may here be distinguished from either empiricism, or classic *à priori*ism, because for pragmatism the first principles are neither the product of a purely passive experience (as the empiricists would have it), nor are they the result of laws unexplainable according to our mental structure. "When our experience suggests to us the utility of a given conception, we endeavor to find whether or not it is true; and if it is found in accord with the facts, if we are led to discover them, we believe in them, and our belief is increased in proportion as the utility of the hypothesis is proved more and more by the senses. Finally, when the given conception ceases to disagree with any fact, it changes its name and is

called a principle. It seems that it is only by means of such a reduction that we can defend the value of our principles, since the induction on which they are founded is far too incomplete; even the principles of contradiction and agreement are nothing but results acquired in this manner" (p. 94).

Finally, the new school agrees with the old scholastic, in that the latter, almost instinctively, has already expressed the equalization of *bonum* and *verum*. We too see that the good is useful, because being good for nothing is synonymous with being evil, and for the same reason the true is the useful. It is in this affirmation that pragmatism consists.

For its size, M. Dessoulavy's article is a gem, and my added remarks are supplementary more than anything else. I think it safe to add that a movement strongly aiding the others in the pragmatic direction is the psychological, under the guidance of Baldwin, Dewey and Münsterberg, of whom the second mentioned can hardly be left out in any discussion of pragmatism. The present emphasis of the motor side of any conscious moment, and the signification of the attitude taken in any explanation of meaning, offers a new interpretation of 'use' and 'practical' which will, I think, safely meet the objections put forth by Bradley and others. As far as I am able to understand the matter, a thing is of 'use,' not only when it is a means towards serial reaction, *e. g.*, shoveling coal, chopping wood, etc., but also when it creates in us an attitude, has for us a certain meaning. We need not throw connotation fits to establish an attitude. Any body adjustment which is felt as meaning, as tendency, is enough. It is in this light, so at least it seems to me, that the objections to pragmatism must be met.

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Pragmatism and Its Critics. ADDISON W. MOORE. Phil. Rev., 1905, XIV., 322-344.

This article might justly be called 'Critics of Pragmatism Criticized.' The term 'pragmatism' is used in its broader sense, the 'Studies in Logical Theory' serving as basis for much of the discussion. The main point urged by the pragmatist against absolutism, and one which has elicited but meager response, is that 'there is no connection between the absolutist's general definition of truth and error, and the standard actually employed in testing any particular judgment.' The two are irrelevant. Professor Creighton's paper on 'Purpose as Logical Category' makes one of the most direct attempts to meet this contention. But, although he allows with the pragmatists that in judg-

ing of truth the appeal is to experience as systematized by thought, partially fluid, in constant readjustment and search for guidance from every quarter, he solidifies his reality by referring to a system in which the present experience 'is completely fulfilled and realized.' No criterion of truth and error is here given, and even if it were, what connection could it have with a completed, fixed absolute? If the system is complete, wherein consists that 'correction and completion' to which he refers? Likewise, if it contains its own 'principles of criticism,' it must be subject to the change that criticism necessarily involves, thereby immediately becoming inconsistent with the idea of fixity. The truth that the mutual aid rendered by present and future to each other in determining reality, is possible only in a 'rationally coördinated system,' by no means involves the static character of that system. Its wholeness is not threatened by its organic quality.

Although some absolutists assure us that immediate experience has a degree of reality lacking in the 'merely ideal' and general experience, pragmatism has been charged with subjectivism through its use of such terms as 'immediate,' 'definite,' 'need,' etc. The attack arises from a misapprehension as to the implication of such words. 'Need' arises only in relation to a 'situation' which includes rather than is included by the individual consciousness. While Professor Pringle Pattison does not commit the error of interpreting 'situation' subjectively, he goes to the other extreme in calling it 'a real world independent of our ideas and unmodified' by them. But the unmodified in a situation is only that part of it the changes of which are not now relevant to it. Unmodified should hence be a relative term, not implying unmodifiable. The permanent or stubborn quality in habit 'constitutes half the stimulus to thought, the other half consisting in the fact that, however stubborn, habit is after all plastic.' Were it not, the fixity of that more-than-stubborn grain in experience would wither all effort.

The eleatic objection presented by Professor Bakewell in 'Latter-Day Flowing-Philosophy' consists in the slur that pragmatism 'resolves the world into sheer flux.' Though he agrees that the 'fixed itself must be conceived dynamically,' he still looks for an 'end,' 'a system of purposes,' 'a distant scene,' which if he regards as static (how else can we interpret these words?) exclude this possibility of a really dynamic conception. He should consider permanence itself as a function of experience, and hence a form of activity, correlative with the function of change within the self-activity. Between these two functions is a constant interchange of content.

The use of the word 'purpose' does not allow any escape from the difficulties of a static absolute. For the 'purpose' must be constructed in order to guarantee its appropriateness in a given situation, as well as any other standard. The construction and completion, as opposed to the idea of appropriation, of a purpose is possible in any given situation in spite of the infinite regress argument, just because its completion consists not in abstract correspondence with an absolute purpose, but in the way it gives outlet to the activities termed 'means.' It does not complete itself as an independent thing, but in thus providing this activity-outlet. In the case of conflict (the presence of which involves the absence of any complete purpose) between activities, there is no appeal to an ultimate previously determined purpose, but a struggle to construct a purpose. Our knowledge of gradually-matured constructions out of a wide range of social material, and their constant modifications, refutes the idea of ultimateness. The purpose through which this conflict finds its solution is merely that which gives the freest and most harmonious activity-outlet. What is permanent in purpose is an abstraction of the function of purposing. Nor does this test of completion in a 'sense' of freedom and harmony bring the taint of subjectivism when it is understood that this 'sense' is the issue of a long process involving as many minds and as much material world as the most insistent desire for objectivity could demand.

Another thrust is the charge of dualism, both of a genetic and an immediate kind. The former is founded upon a misapprehension as to the pragmatic hypothesis which regards habit and thought as correlative functions of self-activity. One is not parent to the other, thought is not a product of evolution, but an organic moment in that process. Each supports and is supported by the other. The charge of an immediate dualism upon those who constantly insist upon the interrelations between the various phases of experience by those who make thought entirely independent of the 'psychological situation' is singularly inconsistent. The absolutist with his 'independent thought' faces the really bald dualism. Difference in function, the pragmatist's dualism, can hardly deserve the name. And the difference between thought and the 'situation' is to be regarded as merely a functional difference, even in such staid sciences as mathematics, the stronghold of the pure-thought advocates. 'Practical purpose' and 'practice' have been ambiguously used by both sides, but according to the true pragmatist they cannot denote a material end, that being a contradiction of terms, nor yet a 'purely theoretical' problem,

since either as a process or an end such purity, involving entire exclusion of the physical, is impossible.

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PHILOSOPHICAL PROBLEMS.

The University of California Publications. Philosophy, Vol. I.

In commemoration of the Seventieth Birthday of Professor George Holmes Howison. Berkeley, The University Press, 1904.

Of this beautiful and stimulating volume, it is perhaps enough to say, in general, that in both form and content it honors the occasion which inspired it.

Professor McGilvary in the first essay discusses 'The Summum Bonum.' After a presentation of various current meanings, Professor McGilvary says, 'The problem before us is to determine whether there is any reasonable highest good for men at large.' Passing over much interesting detail to net results, the solution is found in the conception of 'the common good.' But this common good 'is not a good common to all human beings, but only to a group which constitutes a *community*.' How large the community shall be will depend on various conditions. Further this common good 'is not something ready-made, nor does it need to resort to metaphysical principles or theological considerations' to give an account of itself. A common good, a community ideal, grows out of: (1) the fact that in pursuit of the various individual goods common means such as police protection, etc., are needed; (2) 'the naturally altruistic nature of man — all normal men have at heart the good of some other beings than themselves'; (3) 'the contagion of desires'; (4) 'social pressure in the forms of teaching, preaching, etc.' The common good thus generated, in the constant maintenance and reconstruction of which the individual ultimately finds his own satisfaction, is, then, the Summum Bonum.

'The Essentials of Human Faculty' is the title of an interesting paper by Professor Mezes. On the psychical side the chief human differentia is found in the ability to construct alternatives, to ask double questions, to choose. And this is due: (1) to the development of free ideas, floating adjectives — a world of meanings *consciously* segregated from the world of facts; (2) to the development of the power of voluntary effort, the power of *consciously* reinforcing a weak or mastering a strong impulse. In the opinion of the reviewer voluntary effort is too much abstracted from the cognitive 'self' at whose 'bidding' and 'command' it is. Physically the *differentia humana* is

found in erectness, the attainment of which has necessitated changes in the hand, the jaw, the shoulders and spinal column, and the feet. 'Now note that this is a list that even in popular thought is significantly connected with effort and will power,' as shown in such phrases as 'loosing one's grip,' 'setting one's jaw,' 'having no backbone,' 'weak-kneed, flat-footed,' etc. In short, '*Voluntary effort, which makes possible choice our original differentia, turns out to be the psychic correspondent gradually pruned and organized of the physical strains and stresses incident to erectness which itself conveniently sums up the physical differentia.*' As the author suggests in a note, there are many points of attachment between the essay and certain doctrines of pragmatism.

In 'Some Scientific Apologies for Evil' Professor Stratton opposes the doctrine of the necessity of evil in experience. The 'contrast' or 'foil' theory demands only 'the idea of evil, not actual evil.' And if it be asked whence comes the idea, Professor Stratton suggests that the conduct of animals might furnish it. These antitheses of ideal and actual evil and animal and human conduct suggest certain difficulties which cannot here be developed.

But Professor Stratton goes further and says that evil is not necessary even in idea, since (1) psychologically and logically the contrasting content necessary for defining the good can be supplied by intellectual and æsthetic experiences. Definition requires not contradictory, but simply different content. [Some logicians will challenge this.] (2) 'From the standpoint of evolution, evil is not a lower level, as viewed from a higher.' The conduct of a tree, a bird, a child, are not bad, because immature. Yet we do condemn the person who, when childhood is passed, refuses to put away childish things. But Professor Stratton thinks, 'It is quite conceivable that life should unfold in such a way that our various instincts should always stand in such right proportion, in such mutual check and adjustment that our character throughout its entire course would give us a sense of perfect symmetry, in that all our powers would unite in work toward an appropriate end.' Why such an evolution if possible is not actual, especially since it is regarded as a revelation of God's character, Professor Stratton confesses still remains 'a mystery' and says we must look for a truer revelation 'in some inner light, some inner voice.'

If the conceptions of pragmatism which appear in Professor Rieber's paper on 'Pragmatism and the *A Priori*' be typical specimens of the fruits of pragmatic teaching thus far, well may the pragmatist despair. Some of the most discouraging imputations run as

follows: "The mind of man was *created by phenomena*" (p. 76). "Mind which the pragmatist puts last in the evolutionary series" (p. 77). "Thought being a function in the present situation *exhausts its entire meaning in that situation.*" "He (the pragmatist) gives a fundamental place to matter or that which is other than mind, and regards mind as simply episodic, *a mere attendant phenomenon* in the evolutionary scheme" (p. 80). "Following Spencer, those thoughts of ours which seem so irresistible are simply results of transmitted inheritance." "All professed pragmatists *admit* that it has its roots deep down in *Spencerianism*" (p. 87). "We pronounce it (thought) true if it contributes *to the existing order*" (p. 82). [*Italics mine.*] I am sure pragmatists would like to see chapter and verse for these attributions.

On some of these misconceptions, especially those concerning evolution, I have commented in the *Philosophical Review* for May of the current year. The charges of 'materialism' seem so far wide of any pragmatism I have seen or heard that there appears to be scarcely common ground enough to serve as a basis for discussion.

The *a priori*, Professor Rieber defines as "that primary, self-explanatory, category, or system of categories, which we must accept upon their own authentication as justifying all derivative knowledge and preventing its dissolution into universal scepticism." After such a Spinozistic statement it is not strange that Professor Rieber should discover that pragmatism has no *a priori*. It certainly has none of that sort. Indeed one would suppose that since Locke's and Kant's discussion of analytic judgments, it would be difficult to find even among absolutists many who would so frankly give the *a priori* such a character. Of such an *a priori* the pragmatist would at once ask: What can be meant by a category being 'its own authentication'? Does 'authentication' mean anything as applied to a content simply given? Does not 'authentication' require a relation to other experiences? And is not the 'authentication' of any category found not 'in itself' but precisely in the 'derived' experiences? Further, if there be a system of *a priori* truth, which is just all truth and nothing but truth, must there not be also a system of *a priori* error?

Though pragmatism is without *such an a priori* it still may have an *a priori*. The pragmatist's *a priori* is not a particular content or system from the womb of which all other knowledge is to be drawn; it is rather a certain *way* in which *any* experience is made to lead to other experience. It is not a divine autocratic prerogative of certain contents of experience to the eternal exclusion of all others; it is a democratic office to which any experience however humble may aspire.

The criticism of pragmatism is continued by Professor Bakewell under the caption, 'Latter Day Flowing Philosophy.' Professor Bakewell, however, sticks much closer to the texts of pragmatism than does Professor Rieber. As the title suggests, the main thesis is that pragmatism leaves no stable element in experience, but resolves it into 'a universal flux, into something 'utterly plastic,' 'something like a kaleidoscopic eye accompanied by a chameleon memory trying to grasp in view a perpetually dissolving field.' The individualistic and subjective characters of pragmatism are also noted as corollaries of its fluctuous nature. In the article above mentioned, I have discussed Professor Bakewell's main contention and have nothing essentially new to add here.

In general it is interesting to note the great difficulty and narrow margin with which Professor Bakewell himself escapes pragmatic conclusions, and that he succeeds only by hobbling pragmatism in certain cases with interpretations of will and desire to which no pragmatist would subscribe, and in others by falling back on an absolute *purpose* after a telling critique of absolutism in other forms.

The great desideratum of all modern voluntarisms, says Professor Bakewell, 'is to find a fixed' (p. 304). This is not to be found in substance regarded as either matter or mind. "Equally vain is it to seek refuge in a world of immutable ideas. Equally vain and verbal is the attempt to find the permanent in some mysterious psychical entity." Again, 'We cannot simply find our desired fixed by defining the nature of the will in terms of some ideal pattern, to which the individual will must conform.' Where, then? Professor Bakewell answers: 'The solvent conception must be sought in the notion of self-activity.' But where in self-activity is the permanent? It is in the element of purpose, plan. Here, however, the reader's perplexity begins. On the one hand we read that 'this is not any static plan, external to the process and constraining us therein.' This would seem to mean that planning, purposing, is a function of self-activity out of which arise specific plans and purposes. Nowhere is there here an absolute plan or pattern — all of which is very orthodox pragmatism. On the other hand, we read of the 'end toward which it (experience) tends' (instead of ends in experience), and 'in so far as that end can, as it were, be appropriated by the life of the individual knower'; and again, 'I must believe that there is a distant scene to which the steps as they come, one by one, are or may be surely leading.' And again we read of 'a system of purposes within which each particular purpose has its fixed place and relative value.' All these passages are

quite capable of a pragmatic interpretation. But it is difficult to resist the conviction that Professor Bakewell has no such interpretation in mind; that in these statements the 'end,' the 'distant scene,' the 'system of purposes,' refer to some fixed, final and absolute goal. Professor Bakewell apparently regards the subjective and individualistic characters of pragmatism as obvious corollaries, requiring no exposition.

'Some Problems in Evolution and Education' is the title of an interesting paper by Professor Henderson. Two conceptions, the significance of infancy and the non-inheritance of acquired characters, are especially significant for education. (1) A long period of infancy means the opportunity to acquire, not certain specific adaptations, but the disposition and capacity for adaptation. The supreme adaptation is the tendency to readaptation, to reconstruction. In the helplessness of the infant we find the freedom that is the parent of progress. (2) The non-inheritance of acquired characters is just what we should expect in an organism of long infancy. Infancy would lose its meaning, would be anomalous, if it were loaded with the habits of previous generations. The evolution of the capacity for adaptation means precisely the evolution of the non-inheritance of acquired characters. But as fast as this period of infancy and the non-inheritance of acquired characters develops, we observe the emergence of social heredity or education, which is defined as 'a process of conscious selection, a process by which whatever is of value in the past for present life may be appropriated without becoming a rigidly fixed habit or instinct.' How to secure in this material of the past such precision and definiteness as to be effective and still keep it open and free to reconstruction as new conditions develop, is just the problem of liberal education.

A paper on 'Philosophy and Science in Education' is presented by Principal Burks, in which he says that there 'cannot be a science of education because the facts involved are too varied in character and too widely separated in their relationships.' Nor can there be a philosophy of education, since its subject matter is a limited field of reality. It is too broad for science and too narrow for philosophy. However, philosophy may render great service by checking the fads and prejudices, the artificial issues, such as 'culture versus utility,' 'special versus general training,' 'interest versus effort,' etc., which the history of education and current discussion everywhere reveal. On the positive side 'the fundamental problems of education are identical with those of life,' and 'the philosophy of education therefore is nothing less than the philosophy of life.'

In a scholarly and well-written essay on 'The Dialectic of Bruno

and Spinoza,' Professor Lovejoy traces very clearly the philosophical pedigree of some fundamental difficulties of present-day absolutism. He shows how the attempt, first systematically made by a Neo-Platonism, 'to relate a simple perfect and immutable absolute to the universe of concrete, manifold, temporal experiences' results in a separation between the being, the *esse*, the that of reality, and its attributes, its what — the former being assigned to the absolute, the latter to finite experience. But this only befogged the problem for a time, and resulted in an oscillation continued unto this present day, between mystical appeals to the principle of *coincidentia oppositorum* as in Bruno, and the unmediated parallelism of substance and attributes as in Spinoza, or the degradation of the qualities to the level of an illusory appearance of the substance. Professor Lovejoy shows convincingly that the attempts to make Spinoza consistent by an idealistic interpretation of the attributes only makes him historically inconsistent, that in view of his heritage from Neo-Platonism and Bruno, Spinoza was committed as much to the differentiating substance as to the unified substance; to the substance in the qualities, as to the substance transcending the qualities.

The moral Professor Lovejoy points is the hopelessness of the attempt, not yet wholly given over, to make a metaphysic of an absolute absolute, which at the same time must take up into itself the successive and processive nature of finite experience. "In fine, to assert of an ultimate reality both its *transcendence* as regards its essence or distinctive predicates, and its *inclusion* of the whole *esse* of something defined as having an essence different from those predicates, is to adopt self-contradiction as the method of metaphysics."

Professor Stuart's paper on 'The Logic of Self-Realization' contains an acute criticism of rationalistic and ontological absolutism and a convincing account of the 'instrumental' conception of the self — of the self as 'an ideal of ethical *method*, not a contentual or descriptive ideal from which either the details or the generalities of right conduct are to be extracted.' After pointing out the value of Green's critique of utilitarianism and evolutionism, he shows how Green 'proceeds forthwith to the other extreme of proposing as an ideal a conception which in the end amounts to a wholesale begging of the question for all cases of true moral difficulty' (p. 180). 'According to Green the moral ideal is the infinite personality of the absolute self.' Therefore it might appear 'that the province of ethical theory should be the description of the content of this ideal.' But 'the expounders of this system insist that all human knowledge of the ideal must be

imperfect at any given time.' What then? We must appeal to history 'where the absolute is working out a progressive self-revelation' and where we can at least get the general line of direction. But 'how can we interpret history without that knowledge of the ideal which is declared impossible'? On the other hand, 'if it were impossible, the appeal to history would be superfluous.' Again, even if by faith we insist that history is a revelation, so far, of the absolute, aside from the problem of sin and error involved in such an assumption, how can the past, taken simply as a revelation of the content of the absolute, afford any moral guidance for the future which must bring new conditions? In short, this conception of self-realization is in the end 'but a kind of intuitionism grown self-distrustful.' On the positive side a true theory of self-realization must rest upon the following principles: (1) There is no ultimate ethical ideal admitting either of complete formulation prior to experience or of progressive formulation in the course of experience. (2) The actual coöperating factors in ethical deliberation are, concepts or standards corresponding to particular types of virtue and vice, and concrete particular ends of present desire. (3) The outcome of the process is a purpose or plan reached through a unification of these factors involving in a greater or less degree transformation of them all (p. 188).

But what determines the point at which this process of transformation through analysis and synthesis has reached a goal? Professor Stuart answers: "The formal test of the rightness of an act must be for the agent his own consciously grounded conviction of its *finality*." But this finality is not the mere *de facto* finality of deciding to do or leave off doing. It refers rather to the *method* of decision. It means that the process of deliberation has so taken account of all the known relevant factors in any given case that it can have at the end the *logical* attribute of finality for *that* situation. Whether or not one finds Professor Stuart's account of the criterion adequate, the important thing is his contention that the construction of the moral ideal is a part of the moral act, not given outside and prior to it; and that self-realization is just the entire act of constructing and executing a purpose rather than a process of analyzing and imitating an archetype set from and to all eternity.

'Utility and the Accepted Type' is the title of Professor De Laguna's paper, in which he discusses the relation between two apparent standards of conduct, (1) 'a more or less definite type of conduct to which the quality of rightness or wrongness belongs and the appropriate ethical feelings are attached, as honesty, courage, chastity, etc. ;

(2) the other, the probable utility of the act to the agent and society.' After an interesting comparison of æsthetic and ethical judgments, Professor De Laguna finds that these two standards are really not distinct and opposed standards at all, but are rather the relatively permanent, the conventional, the conservative and the reconstructive, the individual, the radical factors, present in all moral experience. "Utility and conformity are then alike essential elements in moral life. Whether in any particular moral judgment either is ever active to the entire exclusion of the other is a question which need not detain us." I see no harm in admitting that the type may act alone. Some readers, however, are likely to find, in view of the preceding discussion, that there is harm in such an admission. The following anti-absolutist passage is worth noting: "The relatively permanent content of the type may pretend to an eternal self-reference until scientific induction shows its genetic dependence upon experienced utility; but the shifting border lines have their distinct external reference. Thus it is found that no moral law, categorical as it may commonly seem, is capable of a valid universal statement, unless indeed the reference to utility be itself formulated as a law" (p. 223).

Those who have encountered pedagogical difficulties in teaching syllogistic logic will find Dr. Dunlap's paper on 'A Theory of the Syllogism' suggestive. Dr. Dunlap attempts to deal with the old subsumptive difficulties, and offers a classification of propositions and a system of symbols which he thinks is able to take care of all possible relationships. Just how far Dr. Dunlap has succeeded could scarcely be expected to appear in a paper which aims to present only an outline with a few illustrations. It is at any rate an interesting attempt at a much-needed reconstruction of the syllogism.

The last paper, by Dr. Overstreet, on the 'Basal Principle of Truth Evaluation' seeks to escape the implicit skepticism of absolutism by an attempt to make out a case for 'a perfectly adequate grasp of a partial truth.' For this adequacy there appear to be two criteria: 'inconceivability of the opposite,' and 'self-maintenance'—the relation between which is not altogether clear. To the reviewer the crux of the paper lies in the attempt to escape the absolutist's difficulty while still holding to the latter's conception of the general nature of truth and reality. Thus the author's conception of completeness is the absolute completeness of a fixed and closed system, instead of completeness as determined by specific purposes, which to the reviewer appears to be the only way of escape from the absolutist's dilemma.

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EMOTION.

Le Mécanisme des Émotions. DR. PAUL SOLLIER. Paris, Alcan, 1905. Pp. 303.

The theory developed in the five chapters of this volume is succinctly stated in the following definition: Emotion is 'the diffusion of energy transformed and liberated by the brain in the brain itself and the absorption of this energy by the brain at the expense of the effective work for which it was destined' (p. 48). To be more precise, this diffusion takes place in the cerebral cortex, with which alone the author connects phenomena of consciousness. For emotion is also a phenomenon of consciousness, not merely the diffusion of cerebral energy (p. 115). Strictly it is to be considered not even as consciousness of the diffuse molecular changes of the cerebral cortex — still less of the peripheral changes — but as consciousness of the molecular state of the cerebral cortex brought about by the diffusion of a stimulus in the brain, whether transitory or permanent and whether accompanied or not by surplus of activity or by inhibition (p. 234). The essential phenomenon, however, is wholly physical, the feeling is a result of the consciousness of the disturbance which it accompanies and completes (p. 243). The physical basis of emotion is the emotivity or excitability of the cortex, that is, the facility, original or acquired, with which the brain responds to stimuli by a diffuse expenditure of its energy. This property is identical at bottom with sensibility and irritability (pp. 110, 117), and, indeed, with the susceptibility to general disturbance possessed by every machine (pp. 10, 20, 46). Hence 'the mechanism of emotion': the emotional process is, in the strict sense, mechanical.

The theory thus outlined consists of three main parts: (1) The emotional process is mechanical, physical; (2) it is a process of diffuse, incoördinated nervous discharge; (3) it is a central, cerebral, not a peripheral process.

On the first of these points the author, while admitting the uniqueness of the machinery and energy of the brain, nevertheless insists that the cerebral mechanism not only obeys the general laws of dynamics and physics, but differs in no essential respect from physical mechanisms; between its functioning and theirs there is not only analogy, but identity (p. 40). It is a little difficult to reconcile this broad assertion of identity with the previous recognition of difference. Are we actually to suppose that the postulate, the operations of nature are everywhere conformable to law and, indeed, to [mechanical law, is the same thing with the postulate that mechanical laws are the only

laws there are? However, the general question as to how far the functions of the brain can satisfactorily be expressed in terms of dynamics or physics need not detain us. What interests us here is the application of the conception to the explanation of the emotions. After commending Sergi as perhaps the only writer who has attempted to treat the emotions from the general mechanical and dynamical point of view — Sergi cites the laws of inertia, reaction, periodicity, antagonism and cohesion, which he applies, however, directly to the mind instead of to the brain — Sollier gives his own explanation, from the same point of view, of a variety of phenomena of general significance in the emotional process (Chap. II., 'Evolution of Emotion') His conclusions are such as these: In surprise the only operative cause is the mechanical law of action and reaction (p. 57); in contrariety — the feeling of being crossed — the problem is simply one of the equilibrium of forces (p. 64); the failure of an emotion to appear at the time it would naturally be expected, while it appears later (*retard des émotions*), is due to inertia (pp. 70 ff.); the substitution and balancing of emotions are phenomena of the equivalence of forces; their oscillation, of periodicity (p. 79). Now it is not necessary to deny the presence of these mechanical factors to question their adequacy. The simplification is, indeed, complete. But in arriving at these results, have not other factors been overlooked without which the processes indicated would fail to issue in an emotional experience at all? Where, for example, would be the feelings of surprise and contrariety without the thwarting or arrest or other modification of or reference to the interests and complex conative tendencies of a sentient subject?

Conative tendencies, subjective interests, these, if recognized by Sollier as having anything to do with the process of emotion, would, of course, have to be considered in terms of their physiological, and in his view their mechanical, equivalents. But he does not thus specifically consider them. On the other hand, he has a good deal to say of the general relations of mental, and in particular of emotional, phenomena to the functional states of the brain. His account of this relation, however, seems neither clear nor consistent. His view claims to be monistic or unitary. But this may be variously interpreted: and, in fact, various interpretations are here offered us in unmediated juxtaposition. In one place, for example, we have the double aspect theory of a variety of parallelism, and it is regarded as the greatest reproach to seek to subordinate either aspect to the other (p. 34). But then we are elsewhere told that the psychical function is merely a physiological function, and that reducible, in the last analysis, to

general physico-chemical laws (p. 79); and in the same context, as though meaning the same thing, psychological phenomena are declared to be the result of physiological functions. Clearly in either case the psychological is subordinated. Indeed, in one passage, this subordination is expressly asserted (p. 109). The assertion, however, is immediately retracted, and the belief expressed that there is not really subordination, but concomitance (as though the two were logically opposed!) and an intimate association of the diverse manifestations, so that one of them is capable of recalling the others. This suggests a possibly new interpretation, namely that the psychical and physical factors are to be conceived as an organized association of differently appearing energies. There are perhaps traces of this 'energetic' conception. It would be consistent, for example, with such a conception to speak, as Sollier does, of the determination of emotion by perceptions and ideas (p. 286) and of the modification even of the emotivity by reasons (p. 105)—language which, as ordinarily used, implies interaction. But this view is not carried out. The psychical appears rather as a function or product of the physical, or as itself a physiological function, or, again, as an accompaniment of such function. The cerebral state *produces* the representation (p. 110). Emotion is purely cerebral (p. 111). The feeling of the emotion is (p. 115), or results from (p. 243), the consciousness accompanying the cerebral modifications.

These ambiguities are further complicated by the obscure indications the author gives of what may be called the 'seat' of consciousness. Emotion, we are told, has no special center; it is the feeling of the diffusion of energy across the brain in all directions (p. 218). But is this denial meant to hold of the feeling as a state of consciousness, of emotion in the proper psychological sense? This is doubtful. A distinction is drawn between the 'organic' brain in which the fibers of projection terminate and the 'psychic' brain, identified with the prefrontal lobe, connected with the rest of the brain by fibers of association. The former is said to contain the centers of perception and representation, the latter the center of apperception and memory (p. 7). Now this seems to assert a distribution among the brain centers of psychical functions and to suggest that the appropriate modifications of the centers in the 'organic' brain are directly concomitant with conscious sensations, perceptions and ideas. Sollier speaks, indeed, of perceptions and representations as being *in* the cortical centers (p. 286). But on looking closer we find that the properly psychical functions are ascribed exclusively to the 'psychic' brain (p. 7),

and that the author regards this, 'with Bianchi, Wundt, etc.,' as the center of consciousness (p. 222). And in accordance with this sensation even is represented as a consequence of irradiation from the other centers in the center of apperception concomitant with the movement similarly conditioned at the periphery (p. 8). It would seem, therefore, that the 'perceptions' and 'representations' in the 'organic' brain centers are unconscious, indeed not properly mental facts at all, and that the physiological processes directly correlated with conscious experience are in all cases centered in the prefrontal lobe. But this conclusion is in turn made doubtful by the explanation given of certain pathological cases of emotion. It is suggested, namely, that in these cases the center of apperception may be inhibited and only the organic brain be active. In this condition, it is supposed, emotions are produced only on occasion of actual experiences, where no mental representation is required, though the patients may still preserve a form of pure abstract memory (p. 144). It is unnecessary to observe that representation has been previously assigned to the same centers as the sensations and that memory has been referred to the center of apperception. All that we need here note is that with the center of apperception assumed to be inhibited, with the 'organic' brain alone active, the patients in question are certainly not unconscious. Thus this whole doctrine of the relation of mind and brain rests in haze. Is not this confusion largely the result of the author's inveterately indiscriminate use of terms which properly designate actual facts of experience to denote also the hypothetical, objective, physical facts with which they are at best concomitant, but by no means identical?

The second main part of Sollier's theory of emotion was that emotion is, or is the feeling of, the diffusion and absorption by the brain of energy destined for effective work. It is not merely that the energy diffuses itself through numerous paths, it must diffuse itself through paths which it ought not to follow (p. 19). Not that there is always, as Paulhan holds, arrest of tendencies; tendencies may be greatly facilitated. Emotions may be dynamogenic as well as inhibitory; they may also become systematized and fixed (pp. 101 ff). But in any event the discharge involves a general perturbation of the normal and effective working of the cerebral machinery. There is an absorption of energy destined for practical use. The discharge is by illegitimate paths.

This theory is so plausible, it comports so well with so many obvious facts, that it may seem hazardous to question its adequacy as a general theory covering all cases. One may be permitted, however, to do this in the interest of clearness. The theory asserts two things,

first, that the emotional discharge is widely, or generally, distributed; secondly, that the distribution of the energy is at the cost of effective work. Both assertions, probably, are meant to be included under the term 'diffuse.' The first of these assertions need not here be disputed; the second, however, must not pass unchallenged. For, taken literally, it implies that emotion is a factor in human experience which always imparts a failure in practical efficiency. And this is not believable. It is not believable that the emotional life of man has no other significance than as the break-down of practically efficient coördinations. It is not true to experience that that man is most efficient, in the broad, human sense, whose inner life is cold, calm, passionless and flat. Rather the wide survey of human nature which led Hume to declare, with some exaggeration, that reason is and ought only to be the slave of the passions, suggests a different conclusion. It is, of course, possible to limit the conception of emotion by verbal definition so as to include under the term only those cases which meet the conditions of the theory. But the limitation would be of doubtful utility, and Sollier, at least, does not make it. He seems rather to have been misled by a narrowly mechanical conception of the organism. The brain is a machine. Its 'emotivity' is merely the susceptibility of any machine to general disturbance. If the machine is well made, it eventually recovers from the disturbance and resumes its normal functions; otherwise its efficiency is, to a greater or less degree, impaired. It is even so with the brain (p. 47). Up to a certain point, no doubt, the analogy holds good. The point where it breaks down is where the brain is regarded as the organ, or instrument, of a mental development. It has no merely fixed, mechanical function to perform like other machines; its functions are ever variable, and its measure of efficiency is not the amount of mechanical work it does, but its success in organizing and directing the significant activities of a conscious, developing individual. How far emotion is concerned in this development can only be discovered by a broad contemplation of the facts of human life, and theory must be adapted to the facts, not facts forced to fit the theory. And it does seem as though emotion at large played a more efficient rôle in human development than the theory under consideration allows for. Why is it, for example, that while in terror and anguish coördination of serviceably disposable energy is broken down, in moods of elation, in the glow of sustained enthusiasm, in certain phases and forms of love, we seem to have the most favorable conditions for its organization and employment?

The third part or moment of Sollier's theory is that the emotional

process is purely cerebral. This thesis is directed against the James-Lange, here called the peripheral, theory. This latter theory is under criticism throughout the entire work and especially in Chaps. III. and IV., which treat respectively of emotion and sensibility, the more negative part, and of emotion and cerebral cœnæsthesia, the more constructive. The fullness and vigor of the attack and the pains taken to establish the opposite theory are of the nature of a recantation. For in 1894 Sollier was of a different opinion and published a famous article in which the peripheral theory was held to be supported by experimental evidence — which almost realized James's idea of a crucial test — of the loss of emotion consequent on induced (suggested) general peripheral and especially visceral anæsthesia ('Recherches sur les rapports de la sensibilité et de l'émotion,' *Rev. Phil.*, March, 1894). But this was before he had developed his cerebral theory of hysteria. He then, he tells us, regarded the hysterical anæsthesias 'as was done at that time' (by whom? surely not by James), as purely psychological, as phenomena in which the brain was in no way interested, and believed that 'the brain remained in its normal state of functioning' (p. 159). With these assumptions the conclusions drawn were, he thinks, justified. But the case is altered when it is seen, as he now holds, that the peripheral anæsthesias are only the translation and expression of the cerebral. Now we must conclude, not as formerly, that emotion is absolutely dependent on visceral sensibility and is localized in the points of the organism where the visceral sensibility is preserved, but that 'emotion is constituted almost exclusively by the conscious sensation of the phenomena arising in the brain in the regions governing the viscera and the vaso-motor functions' (p. 191); in brief, that emotion is a phenomena of cerebral cœnæsthesia (p. 234). For the brain itself is sensitive, like any other organ, and — probably through the center of apperception — conscious of its sensitivity (Ch. IV.). The question of the order — perception, emotion, expression or perception, expression, emotion — is met by the assertion that the emotion and the expression are concomitant. The emotion, it is declared, has only two elements, an exciting perception, or idea, and phenomena of expression, at once physical and psychical, namely, phenomena of the cerebral perturbation produced by the excitation (p. 262).

The criticism of the 'peripheral' theories seems to be based in part on a misunderstanding. It seems to be assumed that they share the author's original peculiar 'spiritualistic-dualistic' prepossession and that they treat the peripheral and the cerebral modifications as en-

tirely independent phenomena. Thus they are said to be, while apparently physiological, essentially psychological, 'since they make the emotion the simple feeling of the peripheral variations' (p. 14). And Lange is criticised (p. 227) for making the circulatory changes due to the taking of wine or hashish independent of the action of those substances on the brain, as though a change of view in this respect would make a vital difference in the theory. It hardly needs to be remarked that the common assumption underlying James's theory of emotion equally with Sollier's own is, that the feeling called emotion is directly correlated, like every other content of consciousness, with a special modification of the cerebral cortex. In one sense, therefore, the opposition of 'a cerebral' to a 'peripheral' theory is misleading. Both theories are ultimately cerebral. The question is, with what modifications of the cerebral cortex is the emotional experience correlated? And, again, how are these modifications brought about? And there is the further, psychological, question, in what does the feeling of emotion consist? James's answers are well known.

Sollier's most effective criticisms of these answers are found in the evidence he alleges of the absence of any necessary connection between the specific character and the intensity and extent of the peripheral changes and the character and intensity of the emotions. The personal reaction in emotion, he says, is often always the same with a given individual, whatever may be the nature and origin of his emotion (p. 28). He admits that, among normal persons, like emotions generally express themselves in like, that is, analogous, but not identical, ways; but he has known persons, he says, all of whose emotions were expressed in the first instance by intestinal, cardiac, secretory or circulatory disturbances on which other manifestations were grafted, and he refers to a patient of Charcot's whose excited feelings found vent in laughter under all circumstances, even the most incongruous. He cites the experiments of Sherrington, which, though not conclusive because the whole of the sympathetic system was left intact, nevertheless showed that the suppression of a part of the peripheral conditions by no means involved a corresponding diminution of the emotivity. But the cases of cancer of the vertebral column in which the sympathicus is involved, though not all the fibers are destroyed, show no proportional diminution of the emotivity. Finally in the decerebrated animals of Bechterew and Soury, all the corporeal phenomena were produced reflexly. Thus the emotional sentiment persists when the brain is intact, although the corporeal phenomena are suppressed, but disappears, notwithstanding the pro-

duction of the bodily reactions, when the brain is destroyed (p. 122). This last point, however, is obviously, if James's theory is also cerebral, more specious than convincing. And on the same hypothesis there is but little force, and apparently no little misconception, in the assertion (p. 292), that the 'peripheral' theory is refuted and the 'cerebral' theory confirmed by the fact that sensations are experienced in an amputated limb.

What, then, according to Sollier, is the relation of emotion and its expression? Discussing his experiments on hysterical subjects and arguing on the hypothetical case of the peripheral reactions appearing without the emotion, he suggests the reasonable explanation that, as in the case of the decerebrated animals referred to above, the subcortical apparatus is intact, but that the brain is not in a condition to perceive the reflexly excited reactions. He admits that this result might be interpreted in favor of the peripheral theory. But, he adds, it can be maintained equally well that 'if the peripheral modifications do not of themselves determine the emotion, the emotion is due solely to changes occurring in the cerebral cortex itself, and that the emotional peripheral modifications arise by independent ways and complete the emotion, but cannot constitute it' (p. 161). This is perhaps possible, though it is certainly not clear how an emotion can be 'constituted' without being 'complete.' But it seems to be meant that the essential part at least of the emotional process is, or may be, entirely independent of any modification, direct or indirect, that may be made in the brain by the experience of the somatic reaction. Is this, in the case at any rate of the 'coarser' emotions, probable? Sollier himself, indeed, speaks of fear as 'constituted' by the trembling, palpitations, troubled breathing and movement of flight that may follow, on occasion, a shock of surprise (p. 51). Again, we are told that there are cases in which the greatest emotion is excited with almost complete absence of motor, secretory and vaso-motor phenomena (p. 19). Elsewhere (p. 187) emotion is said to be almost entirely constituted by the excitability of the brain in regions governing the viscera and the vaso-motivity; and, in general, the rôle of the centers of movements and of common cutaneous and muscular sensibility is held to be strictly subordinate. But how are we to know apart from the bodily manifestations what centers are affected? We are thrown back on the general theory. 'I entirely agree with W. James,' says Dr. Sollier, 'in recognizing that the sensation of the manifestations plays an important part in the genesis of emotion,' but he adds that the evidence shows 'that this sensation arises not at the periphery, but in the centers

of representation of the cerebral cortex themselves, and that the peripheral sensations are only secondary, since the cortical representation suffices to produce the emotion' (p. 279). There is then, it would seem, a double sensory process, the process connected with the excitement in the cerebral centers, what Sollier calls the cerebral cœnæsthesia, which alone constitutes the emotion, and the process connected with the bodily excitement, regarded as its 'projection' or 'translation' but relatively to emotion wholly secondary. It is not easy to grasp the relation of these two processes, or of this double process, physiologically, or to understand how two things that manifest themselves, according to the theory, in two such separate ways as cerebral cœnæsthesia and bodily sensations can be both alike treated as the manifestation of emotion, as respectively original and translation of the same fact. But in one respect, at least, the new theory marks an advance: it recognizes distinctly that emotion is not the consciousness of bodily sensations. It is, however, no more the consciousness of cerebral excitement; it is not cerebral cœnæsthesia. The appeal here must be to experience. That it is a consciousness connected with cerebral modifications of some sort few probably at the present day will dispute. But these modifications must be of a sort to correspond with the unique synthesis, the unique attitude, which emotion as a distinct form of affective experience involves. That the modifications due either to present or to past bodily changes in no wise enter into this synthesis is hard to believe; but how far the process is centripetal, how far centrifugal—the sentiment of personality, intimately connected with emotion, is, for Sollier, a centrifugal phenomenon (p. 150),—how far central, and how the synthesis, or synergy, is built up, is still a problem. We need some new organizing conception; purely mechanical principles seem to take us but a very little way after all.

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MEMORY.

The Place of Mental Imagery and Memory among Mental Functions. FRED KUHLMANN. Amer. J. of Psych., 1905, XVI., 337-356.

"The ability to learn has been made a criterion for the existence of consciousness." This implies that conscious use is made of past experience. But conscious memory, or mental imagery, is not necessary for some types of learning, *e. g.*, adaptation in digestive processes at birth, or racial adaptation to environment. Loeb and Lloyd Morgan regard the mental image as the essential factor for the possi-

bility of learning, Bentley and Thorndike do not. Where the memory image does not exist 'consciousness must move within the narrow limits of the present.' But where it is present its utilitarian significance lies especially in its 'forward look,' in 'foreseeing and providing for the future.' The article is a good critical résumé but adds nothing new.

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BOOKS RECEIVED FROM DECEMBER 5, 1905, TO JANUARY 5, 1906.

General Sociology. ALBION W. SMALL. Chicago, University of Chicago Press; London, T. Fisher Unwin, 1905. Pp. xiii + 739. \$4 net.

The Dissociation of a Personality. MORTON PRINCE. London, New York and Bombay, Longmans, Green & Co., 1905. Pp. x + 569.

La théorie physique, son objet et sa structure. P. DUHEM. Paris, Chevalier & Rivière, 1906. Pp. 450.

La matière, sa naissance, sa vie, sa fin. P. DE HEEN. Brussels, Hayez, 1905. Pp. 119.

National Educational Association; Journal of Proceedings and Addresses of the Forty-fourth Annual Meeting held at Asbury Park and Ocean Grove, New Jersey, July 3-7, 1905. Winona (Minn.), Publ. by the Association, 1905. Pp. 968. (Also, separate: *Yearbook and List of Active Members, 1905-6*; pp. 251. *Report of the Committee on Taxation as Related to Public Education*; pp. 87, 10 c. *Report of the Committee on Industrial Education in Schools for Rural Communities*; pp. 97, 10 c. *Report of the Committee on Salaries, Tenure, and Pensions of Public School Teachers in the United States*; pp. 466, 50 c.)

NOTES AND NEWS.

THE second annual meeting of the Southern Society for Philosophy and Psychology, announced for January 2, 1906, in affiliation with the A. A. A. S., has been indefinitely postponed, owing to the inability of the members to be present in New Orleans at that time. It is hoped that arrangements may be made for a meeting at a later time and at a place more convenient for the members.

AT the University of Toronto the following additions have been made to the staff of the psychological laboratory on account of the

increase of graduates and undergraduates in the department: W. G. Smith, B.A., formerly assistant in the laboratory, is made lecturer in philosophy also; T. R. Robinson, B.A., lecturer in philosophy; Margaret K. Strong, B.A., F. L. Barber, M.A., and D. Dix, M.A., class assistants in psychology.

THE chair of philosophy at Lafayette College, to which James M. Mecklin, Ph.D. (Leipzig), was called last year, has been endowed through the liberality of a friend of the college. Psychology is included in its scope.

PROFESSOR ROYCE'S lectures on Idealism at the Johns Hopkins University are to be given during the second half of January. They will be followed in February by a special course of lectures on Educational Psychology, also public, by Professor Baldwin.

THE sixth International Congress of Criminal Anthropology will meet at Turin, April 28, 1906. Professor C. Lombroso is president of the committee of organization. All who expect to attend are requested to send their names at once to the secretary, Professor Mario Carrara, 26 Via Michelangelo, Turin.

PROFESSOR J. MARK BALDWIN has been commissioned by the Mexican government to examine the university situation in that country. He started December 23 for a three weeks' tour of inspection.

THE annual meetings of the American Psychological and Philosophical Associations at Cambridge were well attended. Reports of the proceedings will appear in the February number of the BULLETIN. Professor James R. Angell, of the University of Chicago, was elected president of the former association, and Professor William James, of Harvard University, president of the latter, for the coming year.

PROFESSOR E. HERSHEY SNEATH, of Yale University, has been obliged to take a year's leave of absence on account of his health. He will return to his work in the department of theory and practice of education in September, 1906.

ASSISTANT PROFESSOR C. H. JUDD has been made director of the Yale Summer School.

THE following are taken from the press:

PROFESSOR WILHELM OSTWALD, of Leipzig, has been appointed non-resident lecturer in psychology at Columbia University for the current year. He will give a series of lectures, beginning January 26, on 'The Relation of Energy to Life and Thought.'

DR. RICHARD HODGSON, secretary of the American Society for Psychical Research, died suddenly at Boston on December 20.

PROFESSOR WILHELM WUNDT, of the University of Leipzig, celebrated on November 10 the fiftieth anniversary of his doctorate.

